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Progress Report No. 6

Title: A Study of the Early Detection of Insect Infestations and Density/Distribution of Host Plants.

Citrus Insects Research
USDA, ARS
509 West Fourth St., Weslaco, Texas 78596

Period: July 1-31, 1973

EREP Investigation No. 319
~~NASA Contract No. 11630I~~

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(a) Flights are made each day that weather is suitable. Weather has presented severe problems since the investigation was started. Film is promptly processed, interpreted, and ground crews sent out for verification. Areas photographed were Brownsville citrus area, Los Fresnos, Bayview, S-191 test site, La Feria, Texas A&M citrus groves and border areas where avenues of entry of citrus pests may be established. Interpretation skills relating to host plant identification, density and distribution are improving with color IR film and color balance control has been greatly improved. We rarely encounter problems of color balance with the aerochrome 2443 film.

(b) Maintaining a weekly data collecting program is our primary concern. Insects populations are building rapidly as the season progresses and we feel that our study sites change dramatically from week to week, thus we plan to photograph every available day that weather conditions are suitable.

(c) Accomplishments during the next reporting period will be related to receipt of the Skylab film. Upon receipt of the film we will make comparisons of ground truth data and aerial photography collected to date with the Skylab data. It is expected that we will be able to obtain an early evaluation of the potential use of Skylab data for detection of the distribution of host plants and possible areas of stress for pest entry along the border.

(d) We feel that with the experience that we have gained through the Skylab program, we have expanded our interpretation capabilities, and this has enabled us to simplify and organize these methods so that they can be placed in commercial use more rapidly. The commercial use of these remote sensing techniques should save the farmers money and ultimately offer the possibility of reduced costs of the agricultural products to the consumer.

(e) We wish to continue this effort through the entire annual cycle so that we can pick up seasonal changes in relation to plants as well as insects. While the results obtained up to this time relate to photography from aircraft we are looking forward to receipt of satellite data in order to compare the two data collecting methods and evaluate the potential of the Skylab in providing information of this type over large areas.

(f) Travel during this period was limited to that required for collection of ground truth and one flight to Mexico to collect information on avenues of entry for new pest introductions.